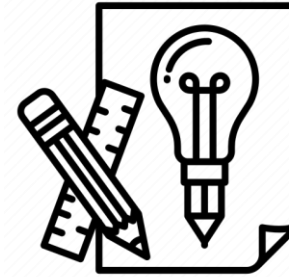


GCSE (1-9)

Design and Technology

“How to find and develop creative solutions that work and solve everyday problems”



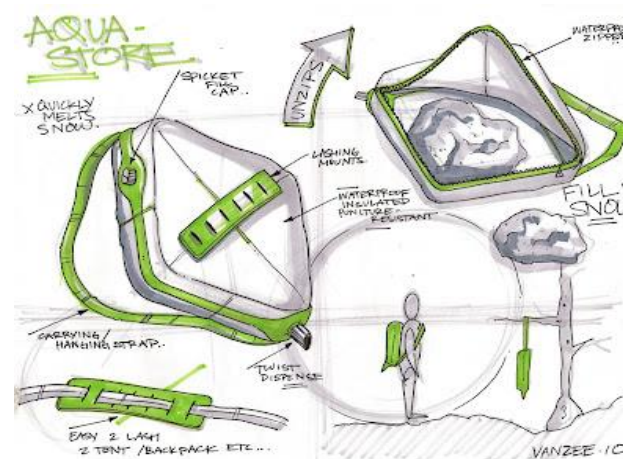
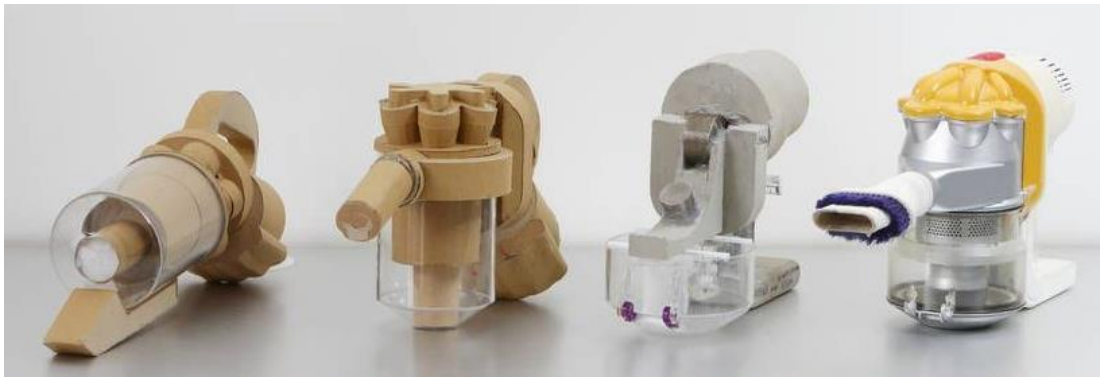
Creating



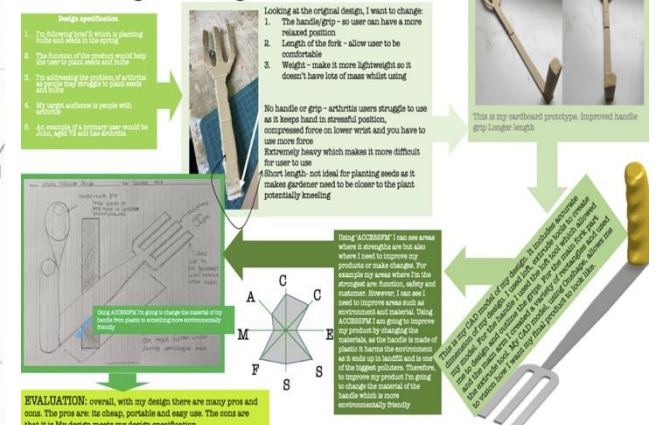
Are you interested in?

- Problem Solving
- Understanding end user needs
- Developing Ideas and designs through iteration
- Modelling and making working prototypes
- Understanding how things work
- Materials and their properties
- Manufacturing processes

What is manufactured board?	Manufactured board samples	Manufactured board in use
Manufactured boards are timber sheets which are produced by glueing wood layers or wood fibres together. The type of wood is often made of waste wood materials. Unlike real natural woods, a manufactured board can look less pleasing. Manufactured boards have been developed mainly for industrial production as they can be made in large sheets of consistent quality. Boards are	MDF - Smooth, even surface. - Easily machined and painted or stained. - MDF is available in water and fire resistant forms.	Used mainly for furniture and interior panelling due to its easy machining qualities. Products with MDF material often are veneered or painted.
	Plywood - Strong board which is constructed of layers of veneer or piles glued at 90 degrees to each other. - Comes in interior and exterior grades	Commonly used for strong structural panelling board in construction. Certain grades are used for boat building and exterior work.
	Chipboard - Made from chips of wood glued together. - Usually veneered or covered in plastic laminate.	Generally used as a veneered and covered with plastic laminated for kitchen and bedroom furniture. Ideal for shelving and general DIY.
	Blockboard - Similar to plywood but the central layer is made from strips of timber. - Good for shelves and worktops.	Used where heavier structure are needed. Frequently for shelving and worktops.



Inclusive gardening

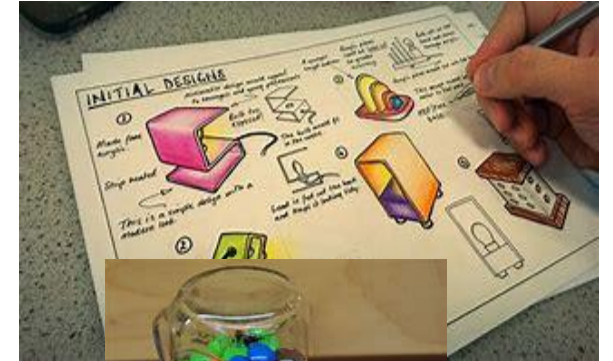
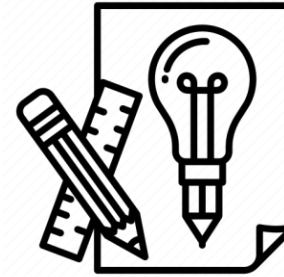


GCSE (1-9)

Design and Technology

In Design and Technology, you'll cover:

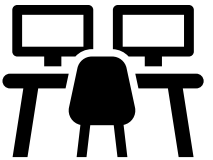
- Real world awareness of iterative design practices and strategies used by the creative designers to develop new products
- Use critical thinking and creativity towards inventive and innovative design solutions that answer real problems
- Understanding materials and manufacturing processes THEORY to ensure designs can be made and will work in real world applications



Creating

How will you be assessed?

- Principles of Design and Technology – **written paper 50%**
 - *Exploring which materials (e.g. plastics/woods/metals) are used to make products and why?*
 - *Exploring which processes (sand casting, CAD, welding) are used to make products and why?*
 - *2 Hour Exam (yr11)*
- Iterative Design Challenge – **NEA Course Work 50%**
 - *Portfolio containing research, designing, modelling, testing and an evaluation. PLUS, your practical piece of work (Wood, Metal, Plastic) (Yr11)*



Design and Technology can take you places!

Product Designer



Architect



Toy Designer

Model Maker

Product Development

Set Designer



Project Manager

Graphic Designer



Design Engineer



Cambridge National Level 1 / level 2

Engineering Manufacture

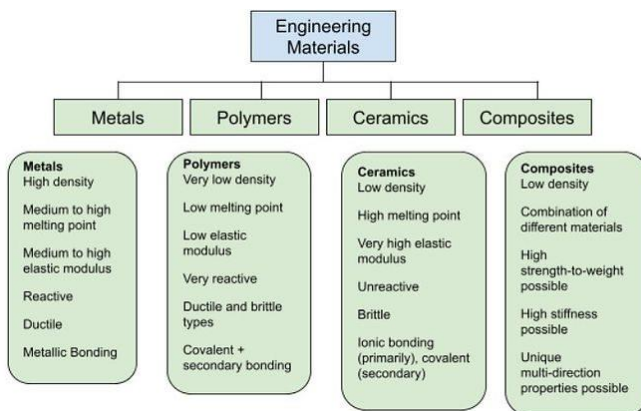
“How to read an engineering drawing and take a product through the manufacturing processes”



Manufacturing

Are you interested in?

- Planning manufacturing processes to make a product
- Reading and understanding engineering drawings
- Understanding the THEORY behind materials and processes to manufacture products
- Learning about manufacturing theories like Lean Manufacturing, CAD CAM and Scales of Production
- Creating programmes for CNC machining



Project Implementation Plan									
Tasks	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6	Task 7	Task 8	Task 9
Phase 1: Self-Assessment									
Define Business Vision	Step 2	Step 2	1						
Identify Stake	Step 3	Step 3	1						
Add test here	Step 4	Step 4	1						
Phase 2: Define Opportunity									
Research Market	Step 5	Step 5	1						
Conduct Interviews	Step 6	Step 6	1						
Add test here	Step 11	Step 12	3						
Add test here	Step 13	Step 14	2						
Phase 3: Evaluate Potential Risks									
Assess Market Size	Step 15	Step 17	3						
Estimate Competition	Step 17	Step 18	2						
Assess Market Resources	Step 18	Step 19	2						
Add test here	Step 19	Step 21	3						
Add test here	Step 21	Step 22	2						
Add test here	Step 22	Step 23	2						
Phase 4: Define the Market									
Access Available Research	Step 23	Step 25	3						
Add test here	Step 26	Step 28	4						
Add test here	Step 29	Oct 1	3						

Cambridge National Level 1 / level 2

Engineering Manufacture



In Engineering Manufacture, you'll cover:

- The THEORY behind different types of manufacturing processes, the materials that can be used and what other factors need to be considered
- Selecting and safely using equipment
- Planning and manufacturing a one-off product using hand tools and manual machines
- Planning and manufacturing in large quantities, using software computer-controlled machinery



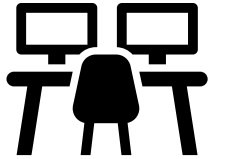
Manufacturing

How will you be assessed?

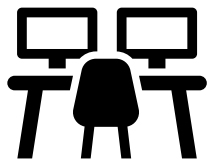
- Principles Engineering Manufacture – **written paper 40%**
 - *Materials and properties used in engineering*
 - *Manufacturing processes in engineering*
 - *Engineering requirements – quality control and planning, scales of production (Yr11)*



- Manufacturing a one-off product – **NEA Course Work 30%**
 - *Planning and making a product from a given engineering drawing*
 - *Using tools and machines safely (Yr10)*



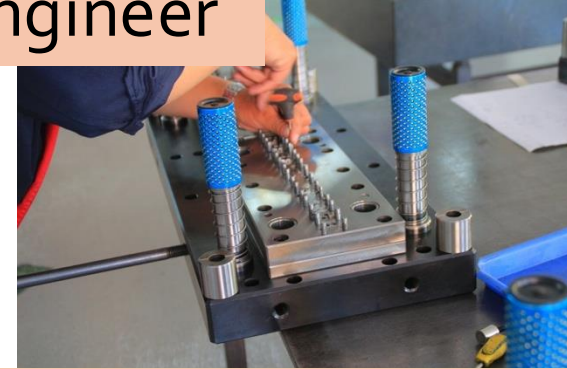
- Manufacturing in quantity – **NEA Course Work 30%**
 - *Creating CAD and digital files from a given engineering drawing*
 - *Setting and operating a CNC machine using correct parameters (Yr11)*



Engineering Manufacture can take you places!

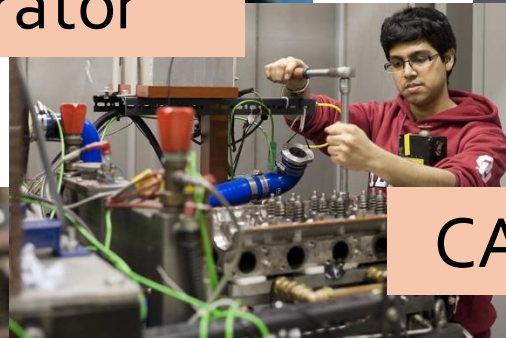
Project Manager

Quality Engineer



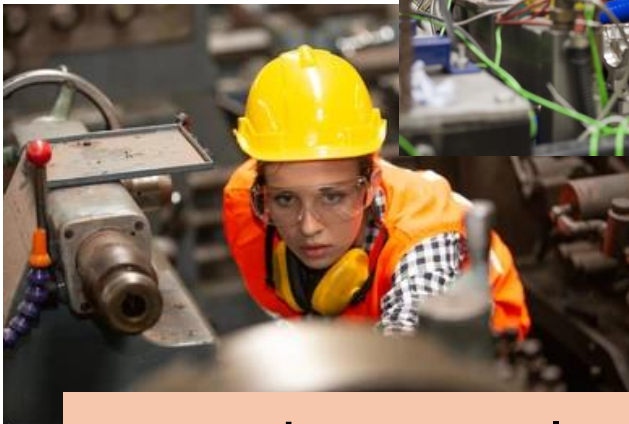
Tool Maker

Machine Operator



CAD Operator

Tool Setter



CNC Machinist



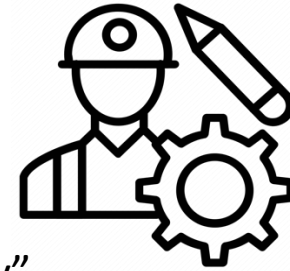
Production Planning

Maintenance Engineer

Cambridge National Level 1 / level 2

Engineering Design

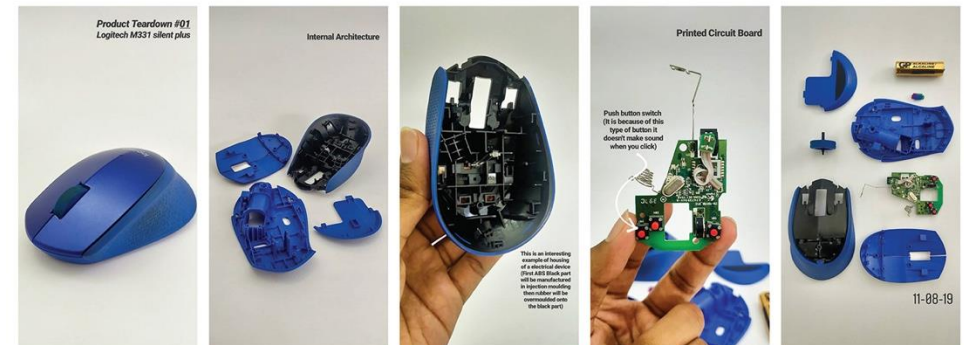
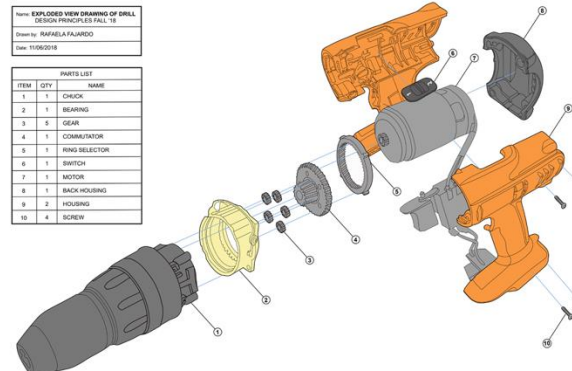
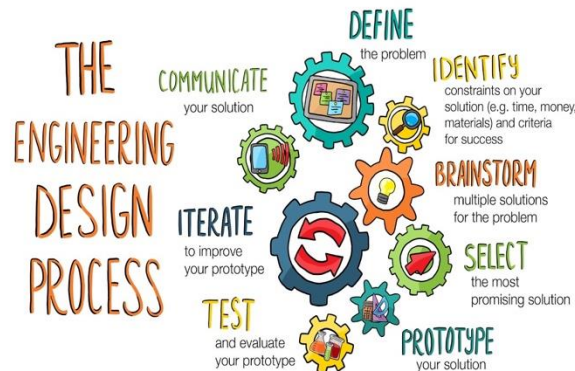
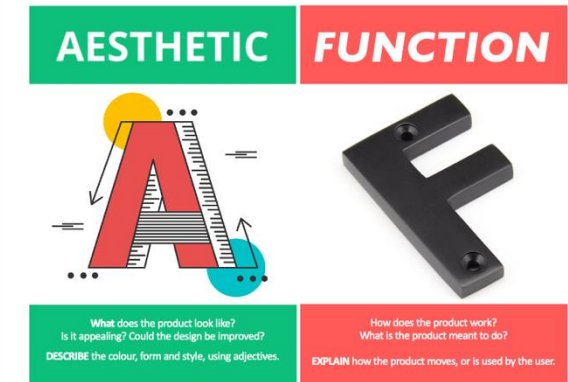
“How to analyse and explain how a product is made and what makes it successful, then present this in the most appropriate way”



Analysing

Are you interested in?

- Drawing and sketching products and designs
- Taking things apart to understand how they work
- Presenting designs and ideas on paper, CAD and modelling
- The design lifecycle and sustainability
- Understanding how things are made and the materials they are made from
- Evaluating how successful a product is



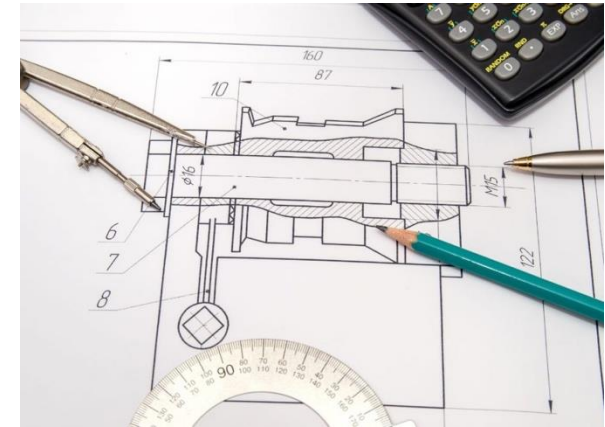
Cambridge National Level 1 / level 2

Engineering Design

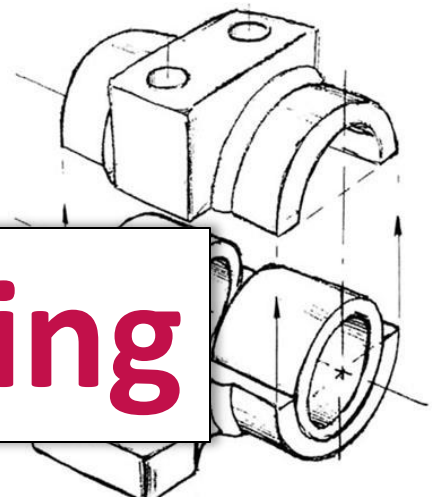


In Engineering Design, you'll cover:

- Analysing how designs are developed – including what information is needed and how manufacturing influences design
- Communicating designs using sketches, drawings and computer aided design (CAD), producing accurate and detailed drawings and models
- How designers create and test models and working prototypes – making high quality models to represent design ideas.



Analysing



How will you be assessed?

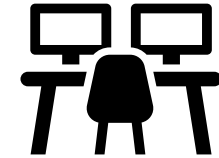
- Principles Engineering Design – **written paper 40%**

- *Design processes – Iterative, Linear and Sustainable*
- *Design requirements and presenting design outcomes*
- *Evaluating design ideas (Yr11)*



- Communicating Designs – **NEA Course Work 30%**

- *Developing design ideas and presenting these in relevant and professional formats (Yr10)*

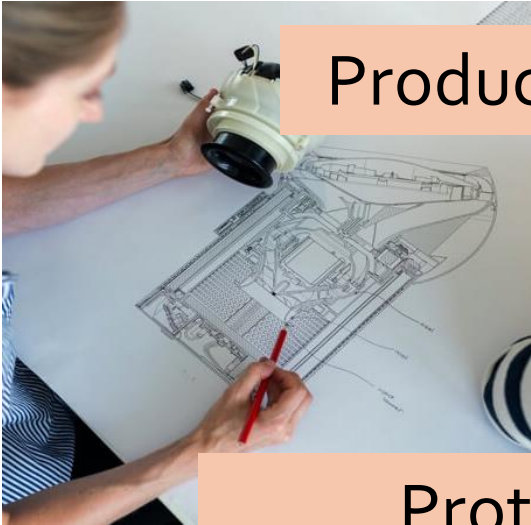


- Design Evaluation & Modelling – **NEA Course Work 30%**

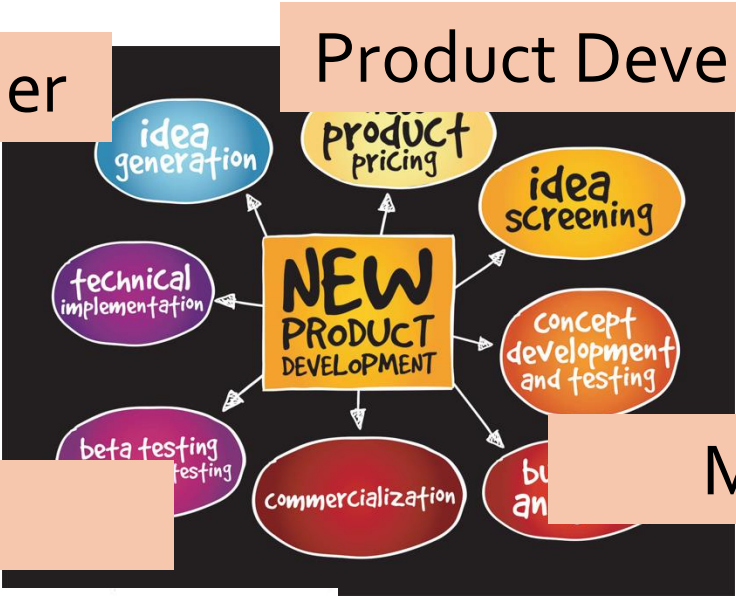
- *Analysis of an existing product and understanding how they are made, what they are made from and how successful they are (Yr11)*



Engineering Design can take you places!



Product Designer

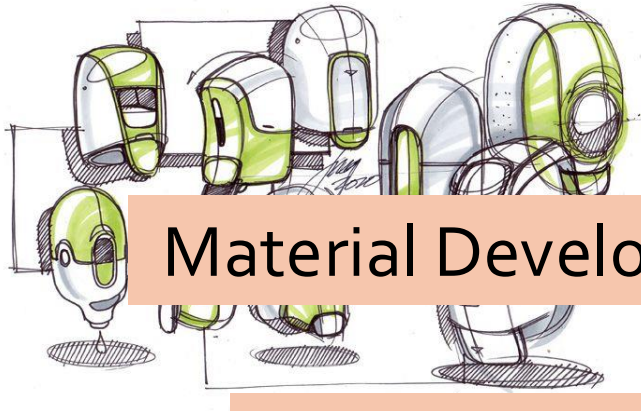


Product Development

Market Analyst

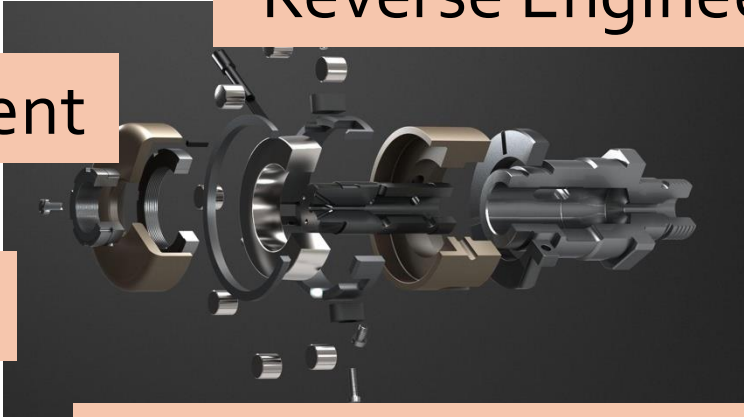


Concept Artist



Material Development

Project Engineer



Reverse Engineering

Design Engineer

Level 2 Vocational Award

Hospitality and Catering

“Understanding the world of hospitality from cooking great meals to managing hotels and restaurants”



Meet the Moment Makers...

Are you interested in?

- Planning and creating food in the kitchen
- What it takes to work in a top hotel or restaurant
- Discovering new flavours in the kitchen that inspire you
- Developing the skills you need to work front of house
- Nutritional food and how cooking methods impact the nutritional value



Level 2 Vocational Award

Hospitality and Catering



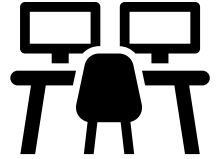
In Hospitality and Catering, you'll cover: 

- Learn about the hospitality and catering industry, the types of hospitality and catering providers and about working in the industry.
- Learn about health and safety, and food safety in hospitality and catering.
- Learn how to plan nutritious menus as well as factors which affect menu planning. You will learn the skills and techniques needed to prepare, cook and present dishes.



How will you be assessed?

- Hospitality and Catering in action – **NEA Course Work 60%**
 - *Nutrition and how cooking methods impact nutritional value*
 - *Planning nutritious menus and meals*
 - *Practical cooking skills*
 - *Presentation and serving of prepared food (Yr10)*
- The Hospitality and Catering industry – **written paper 40%**
 - *Types of Hospitality and Catering businesses*
 - *Health and safety in Hospitality and Catering*
 - *Rules, regulations and the working environment*
 - *Food safety (Yr11)*



Hospitality and Catering can take you places!

Marketing



Hotel Management

Chef



Environmental Health



Personal Trainer

Nutritionist



Event planning



Journalism



Sports Science